Roadstar®

HIF-9981R

Service Manual - HIF-9981R

MODEL : HIF-9981R

WARNING :
FOR CONTINUED SAFETY THE FOLLOWING PRECAUTIONS TO BE FOLLOWED DURING SERVICING.

1. MAKESURE POWER CORD IS DISCONNECTED BEFORE REPLACING ANY PARTS.

2. REPLACE WITH SAME TYPE , CRITICAL PARTS WITH ! MAKE ON THIS DIAGRAM.

3. THE FOLLOWING TEST MUST BE IMPLEMENTED AFTER EACH PEPAIR BEFORE RETURNING IT TO CUSTOMER. USE AN OHM-METER TO MEASURE THE F.C. RESISTANCE FROM BOTH A.C. CONDUCTORS TO ANY EXPLOSED METALLIC PARTS SUCH AS A SCRWER HEAD. METAL INLAYS ETC. THE RESISTANCE MESURED TO BE 10 MEGAOHMS MINIMUM.

TECHNICAL SPECIFICATION

Power output	: 4.5 Watts RMS per channel into 8 Ohms
Frequency response	: 40Hz - 15KHz
Preset EQ	: Flat
	: Rock
	: Classic
	: Pop

NOTE :
In keeping with our policy of continually improving our service and the technical quality of our product We reserve the right to change component type. manufactures sources of supply of technical specification are any time

TUNER SECTION

FM Section	: 87.5MHz – 108MHz
MW Section	: 522KHz – 1620KHz

CASSETTE SECTION

Tape	: Cassette type
Tape speed	: 4.75cm per second
Tracks	: 2 Tracks stereo
Frequency Response	: 125Hz - 8KHz

CD PLAYER SECTION

Frequency Response	: 40Hz - 10KHz
S/N Ratio	: 60Db
Channel Separation	: 40dB

ALIGNMENT PROCEDURES

INSRUMENT REQUIRESD : AM & FM Signal generation
DC Volt Meter, VTVM & Oscilloscope

AM IF ALIGNMENT

1. Set output of signal generator no bigger than necessary to obtain an output reading.
2. Set the function switch to the tuner position and the band switch to the AM position
3 Set volume control to reference output.
4. Set EQ control at normal position.
Fashion loop of several turns of wire and radiate signal into antenna of receiver.

SIGNAL GENERATOR	RADIO SETTING	INDICATOR	ADJUSTMENT	REMARK
450KHZ 400HZ Modulation	Tune to 1620KHz (high end)	SCOPE across IC102(TA 2099N) Pin 12 or 13	T102	Adjust the "∪" Wave for maximum Repeat until no further improvement is noted

MW RF ALIGNMENT

SIGNAL GENERATOR	RADIO SETTING	INDICATOR	ADJUSTMENT	REMARK
522KHz 400Hz Modulation	Tune to 522KHz (low end)	DC Volt meter Across between R135,136=100K	L105	Volt = 1.40V ± 0.1V
1620KHz 400KHz Modulation	Tune to1620KHz (high end)	DC Volt meter Across between R135,136=100K	TC 104	Volt =7.5 ~ 8V ± 0.1V
603KHZ	603KHz	Scope & VTVM Across speaker Jack	L108	Adjust for maximum output
1404KHz	1404KHz	Scope & VTVM Across speaker Jack	TC103	Adjust for maximum output

CD PLAYER ADJUSTMENT

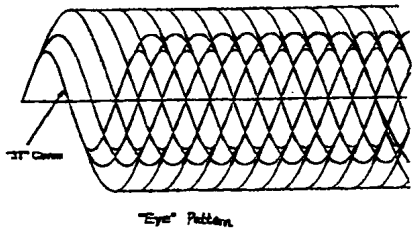
Set the function switch to the CD position.
Connect the SCOPE across TRACKING, VREF, RFO points at PCB .

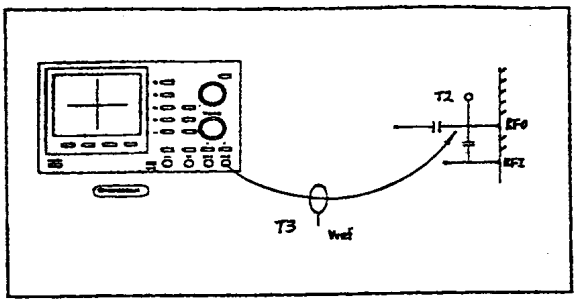
Alignment	Step	Instrument Connection	Condition	Adjustment
RF Adjustment	1	Connect the Scope Across RFO point and the other across VREF point	CD Player in used status	Adjustment VR801 For RF wave to maximum
TE Balance	2	Connect the Scope Across the RFO point And the other to VREF point	CD Player in used status	Adjustment VR802 For the both wave to A = B
VREF	3	Connect the SCOPE across TRACKING, and the other to VREF point	CD Play after TOC Display	Adjustment VR1 For VTVM to 40~50mV Below from center position (20mV)

Adjustment as picture Showed

+ Probe for RFO at TA2065F (1) Pinch
- Probe for VREF atTA2065F (3) Pinch

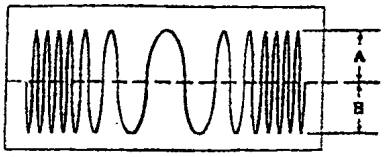
VR801 : (RF)

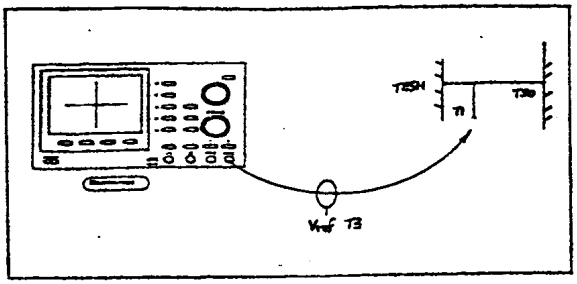




+ Probe for TE at TA2065F (35) Pinch
- Probe for VREF at TA2065F (3) Pinch

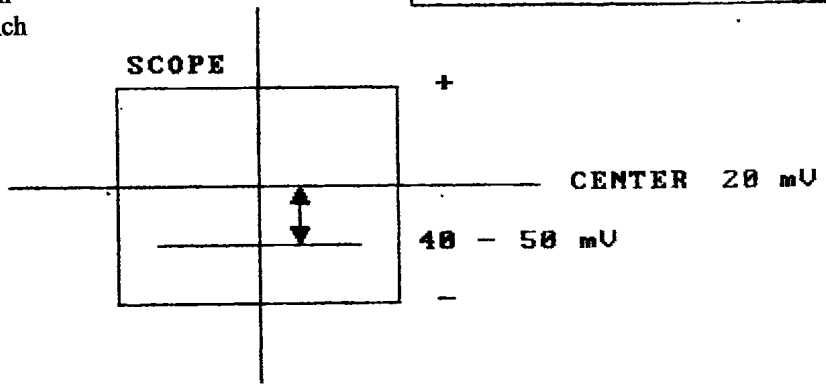
VR802 : (TE)





+ Probe for TE at TA2065F (35) Pinch
- Probe for VREF at TA2065F (3) Pinch

VR1 : (EF)

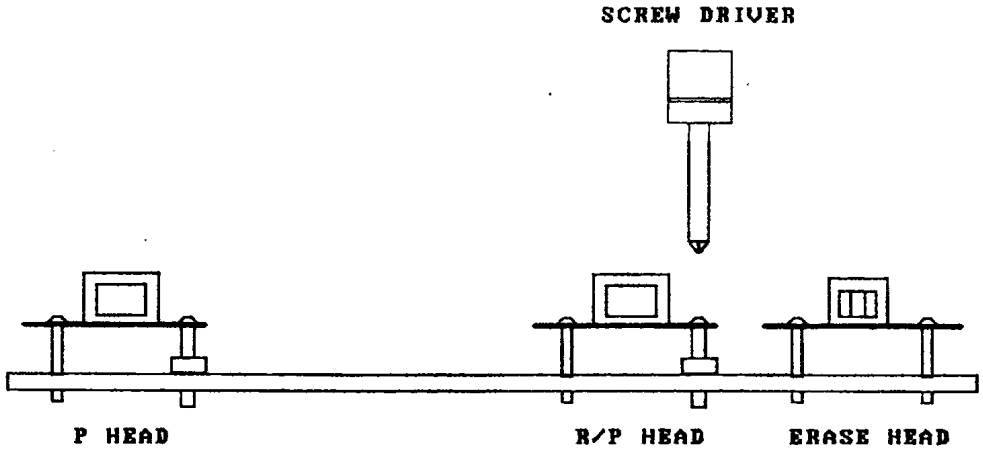


CASSETTE SECTION :

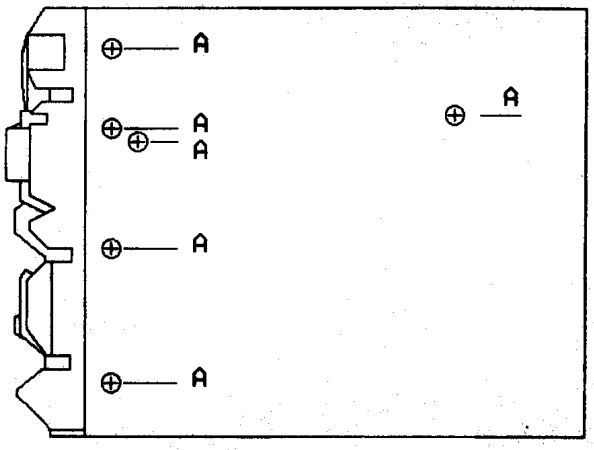
Set the function switch to the tape position.
Connect the SCOPE ,VTVM, Distortion Meter, Frequency Counter.

Alignment	Step	Instrument connection	Condition	Adjustment
Speed Adjustment	1	Connect WOW and Flutter Meter Across the speaker jack with 8Ω load.	Play Tape A with MTT-111 (3KHz)	Adjustment semi fixed resistor VR901 for 3 KHz +/- 30Hz
Head Adjustment	4	Connect VTVM and Oscilloscope across speaker jack with 8Ω load	Play back test tape MTT-113CN	Adjust azimuth screw for maximum output (see diagram)
Oscillator Frequency	2	Connect Frequency Counter T201 Secondary	Record mode	Adjust T201 for 60KHz 7.5mV

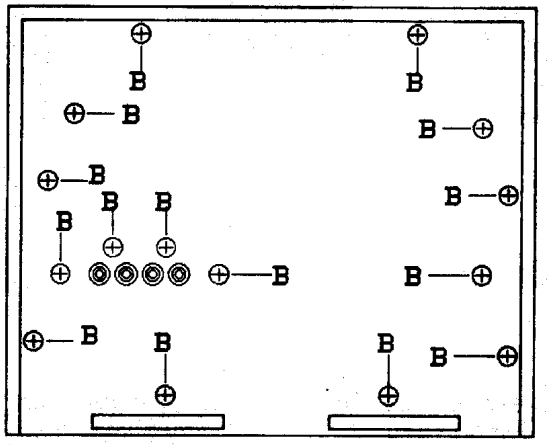
Azimuth Adjustment Diagram:



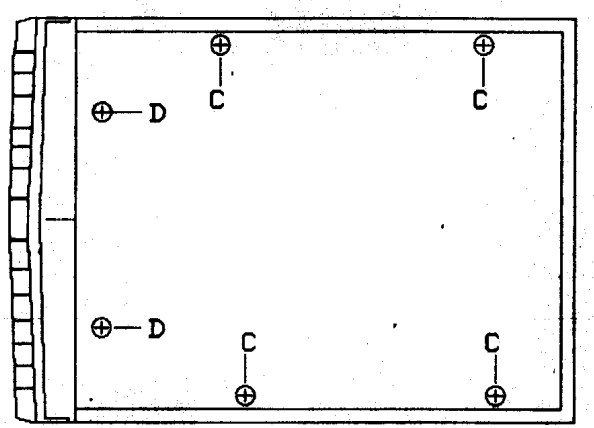
DISSASSEMBLY INSTRUCTION



SIDE VIEW



REAR VIEW

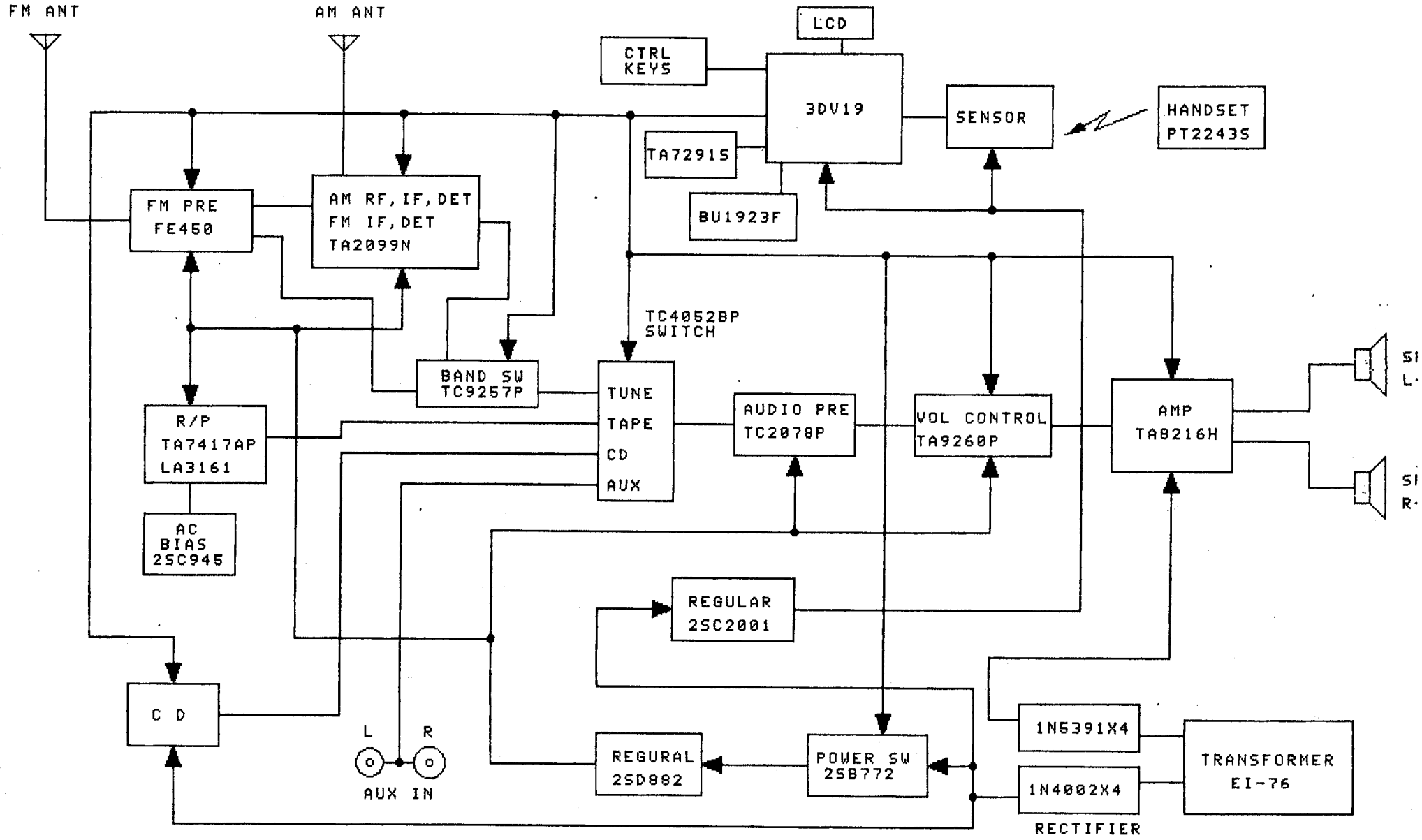


BOTTOM VIEW

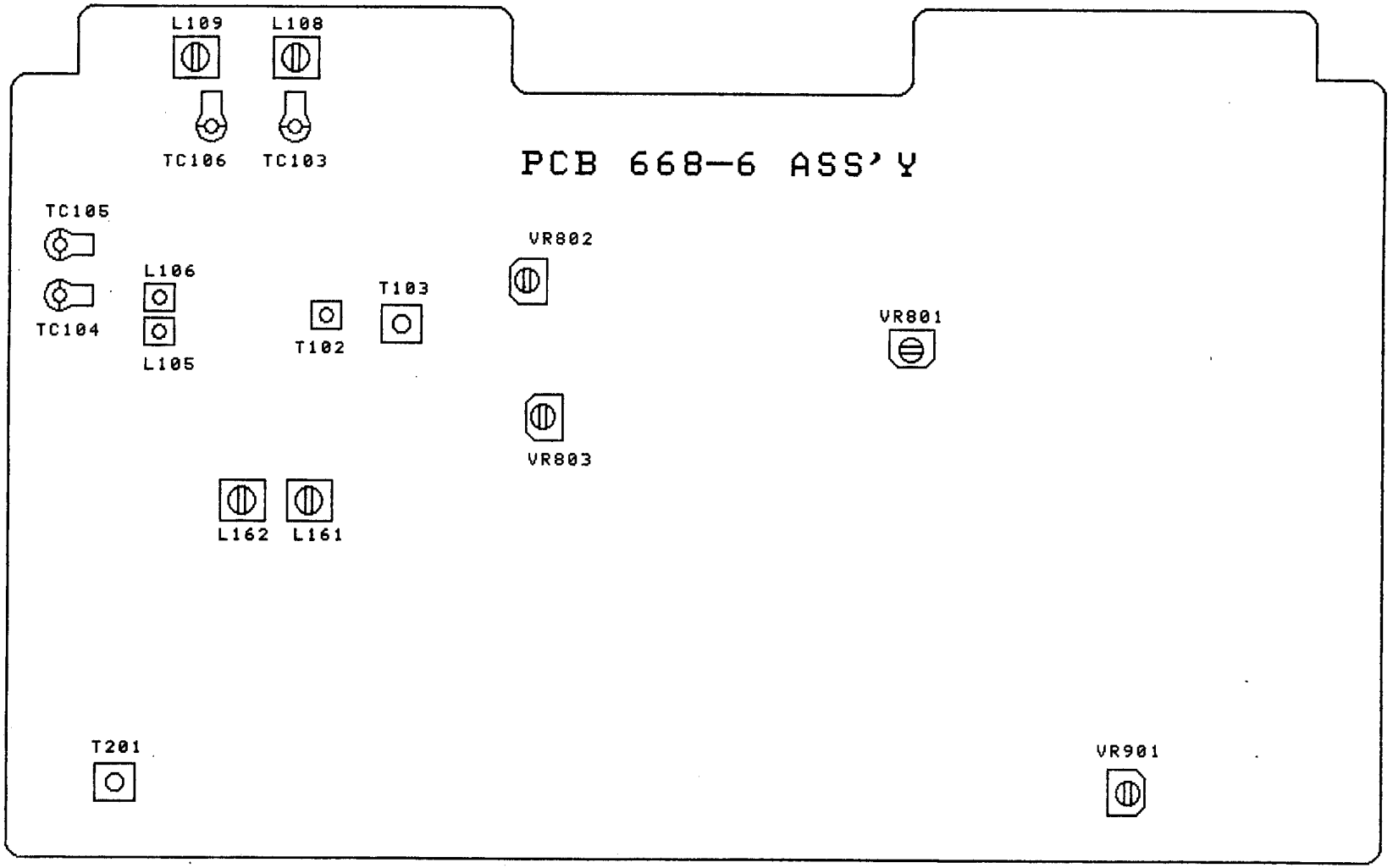
1. REMOVE SCREWS A (12PCS) BOTH SIDE.
2. REMOVE SCREWS B (18PCS) REAR SIDE.
3. REMOVE SCREWS C (4PCS) BOTTOM SIDE.
4. REMOVE SCREWS D (2PCS) BOTTOM SIDE.

BLOCK DIAGRAM

(995FD3R 2B 4.5W)



995FD3R ADJUSTMENT LOCATIONS



995(2B4.5W) FD3R IC VOLTAGE CHARTS

UNIT=VOLT

IC	101	102	171	201	241	301	401
PIN	FE450	TA2099N	TC9257	TA7417AP	KA22211	TC4052BP	TA8216H
1	0	1.98	2.90	5.48	1.33	0.23	1.50
2	0	3.28	2.96	1.72	0.78	0.28	0
3	0	0.12	5.62	1.99	3.61	0.27	0
4	0	1.98	5.60	2.03	7.88	0.39	0
5	1.70	10.37	0.06	2.00	0	0.23	1.49
6	8.90	5.15	3.37	0.01	3.93	0	10.32
7	0	1.49	5.36	2.01	0.78	0	14.42
8	0	0	.0.36	2.00	1.33	0	5.19
9		1.68	0.36	2.00		4.86	24.50
10		0	0.11	2.00		0.10	0
11		0.03	5.65	0		0.40	9.80
12		1.25	5.20	2.00		0.17	13.97
13		1.54	6.00	0.07		0.40	
14		0.70	3.82	2.00		0.28	
15		4.10	0	2.00		6.67	
16		3.73	2.86	2.00		0.38	
17		1.20	0	2.01			
18		1.47	0	0.02			
19		3.12	1.10	2.01			
20		1.82	1.09	2.05			
21		1.98		1.98			
22		1.98					
23		5.16					
24		1.98					

IC	502	571	601	602
PIN	TA7291S	BU1923F	TA2078P	TC9260
1	0.02	5.56	4.83	0
2	6.62	2.72	4.90	4.58
3	0.21	2.98	4.88	4.57
4	0	2.94	4.85	0
5	0.03	5.56	4.86	4.58
6	6.61	0.	0	4.58
7	0.20	0	0	0
8	6.61	2.96	0	0.03
9	0.02	0	4.86	5.04
10		0	0.10	0.03
11		0	0.40	4.58
12		5.56	0.17	4.58
13		2.63	4.85	0
14		2.64	4.88	4.57
15		0	4.83	4.58
16		.2.74	4.90	8.89

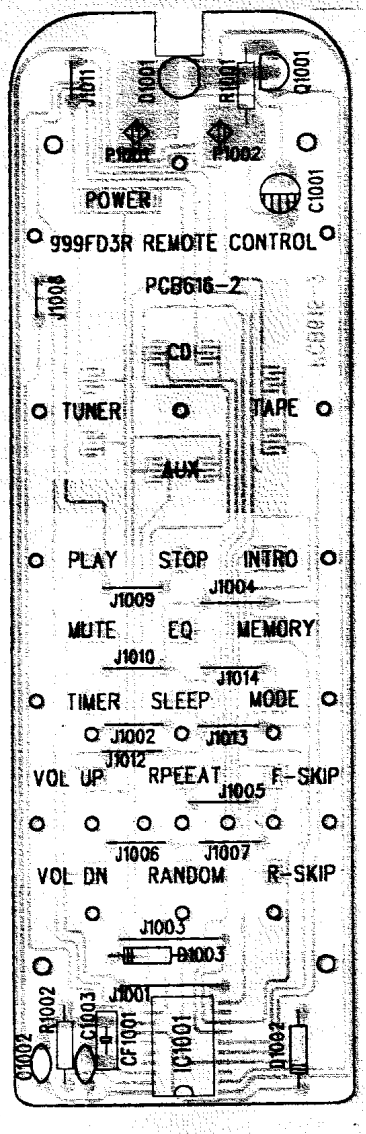
IC	501		801	802		803	804	IC
PIN	TMP87CM71F-1E54		BA4558N	TC9284BF		TA2065F	KA9258D	PIN
1	2.70	-30.50	5.42	0.04	1.68	1.30	3.73	51
2	2.53	-17.00	4.54	3.24	2.19	2.17	3.79	52
3	0.01	-28.20	4.53	5.10	2.48	2.19	2.18	53
4	0.01	-28.20	0	3.25	0.04	4.31	2.18	54
5	5.06	-23.70	4.53	3.06	2.17	1.66	0.41	55
6	5.06	-19.20	4.53	0.04	0.04	1.68	5.07	56
7	0.01	-14.70	5.41	5.07	2.19	1.68	5.07	57
8	0.28	-21.40	8.05	5.07	5.10	2.17	0.08	58
9	0.00	-23.70		5.08	5.10	2.17	0.12	59
10	2.19	-17.00		0.05	2.18	2.17	2.18	60
11	2.74	-19.10		5.10	0.05	2.18	3.77	61
12	5.23	-26.00		0.04	1.78	2.09	3.76	62
13	2.41	-26.00		5.03	4.33	2.17	0.04	63
14	2.44	-25.80		5.03	1.41	2.19	7.71	64
15	0.00	-19.10		5.03	0.04	2.19	2.07	65
16	0.00	-30.70		5.03	5.07	0	2.63	66
17	5.07	2.63		5.03	0.04	2.18	3.78	67
18	0.00	5.76		5.03	3.74	2.58	3.75	68
19	4.19	0.27		5.08	1.72	0.05	2.18	69
20	0.00	1.76		2.39	2.56	5.09	2.18	70
21	0.00	0.01		5.09	2.56	0.08	8.29	71
22	0.00	5.08		0.07.	2.56	2.18	8.29	72
23	0.00	1.80		0.13	0.04	2.19	2.19	73
24	0.00	5.68		0.04	5.07	2.19	2.18	74
25	5.28	5.67		5.10	2.56	1.53	2.18	75
26	0.00	5.68		0.04	5.05	2.17	3.78	76
27	5.33	5.68		0.04	5.10	2.19	3.77	77
28	5.33	5.68		2.18	5.10	2.19	0.04	78
29	0.00	5.07		2.17	2.32	0.26		79
30	0.00	5.07		2.18	0.04	2.18		80
31	5.33			0.05		2.18		81
32	0.00			2.19		2.17		82
33	5.34			1.79		2.19		83
34	-28.5			2.19		2.18		84
35	-28.5			5.06		2.13		85
36	-28.5			1.95		2.17		86
37	-28.5			5.06		2.19		87
38	-28.1			2.16		2.19		88
39	-28.1			2.17				89
40	-28.2			2.13				90
41	-28.2			4.31				91
42	-28.2			0.08				92
43	-28.2			2.57				93
44	-28.2			2.58				94
45	-28.2			2.19				95
46	-28.2			2.17				96
47	-28.2			2.18				97
48	-28.4			2.13				98
49	-28.5			2.19				99
50	-25.9			1.68				100

TRANSISTORS VOLTAGE CHARTS

UNIT=VOLT

TRANSISTOR	E	C	B	TRANSISTORS	E	C	B
Q101 2SA733	10.40	11.10	11.20	Q441 2SB772	14.50	15.40	15.30
Q102 2SC945P	0.60	0.10	0	Q442 2SC945P	0.70	0.07	0
Q103 2SC945P	0.60	0	0	Q443 2SD882	12.10	15.10	11.50
Q104 2SC945P	0	4.60	0	Q444 2SD882	6.70	14.70	6.00
Q105 2SC945P	0.60	0	0	Q301 2SB772	10.80	11.50	11.50
Q106 2SA733	10.60	11.20	11.40	Q302 2SC945P	0.70	0.06	0
Q107 2SC945P	0.60	0	0	Q601 2SC945P	1.50	3.10	0.80
Q108 2SC945P	0.10	1.70	0	Q602 2SC945P	1.50	3.10	0.80
Q115 2SK192A	0	1.90	9.30	Q701 2SD882	9.12	15.00	8.50
Q116 2SC1674	2.90	3.60	2.20	Q702 2SA733	10.70	11.50	11.50
Q171 2SC945P	0.10	11.10	0.10	Q703 2SC945P	0.70	0.06	0
Q172 2SC945P	1.00	8.00	0.60	Q813 2SA733	4.50	5.00	5.10
Q173 2SC945P	0.60	1.60	0	Q814 KSA928A	7.90	5.10	5.50
Q174 2SC945P	0.60	1.10	0	Q901 2SA733	0	0	0
Q175 2SC1674	0.60	3.80	0	Q902 2SC945P	0	0	0
Q201 2SC945P	0	11.50	0	Q903 2SC945P	0	0	0
Q401 2SC945P	0.10	0	0	Q904 2SC945P	0	0	0
Q402 2SC945P	0.10	0	0	Q905 2SC945P	0	0	0
Q403 2SC945P	0.10	0.70	0				

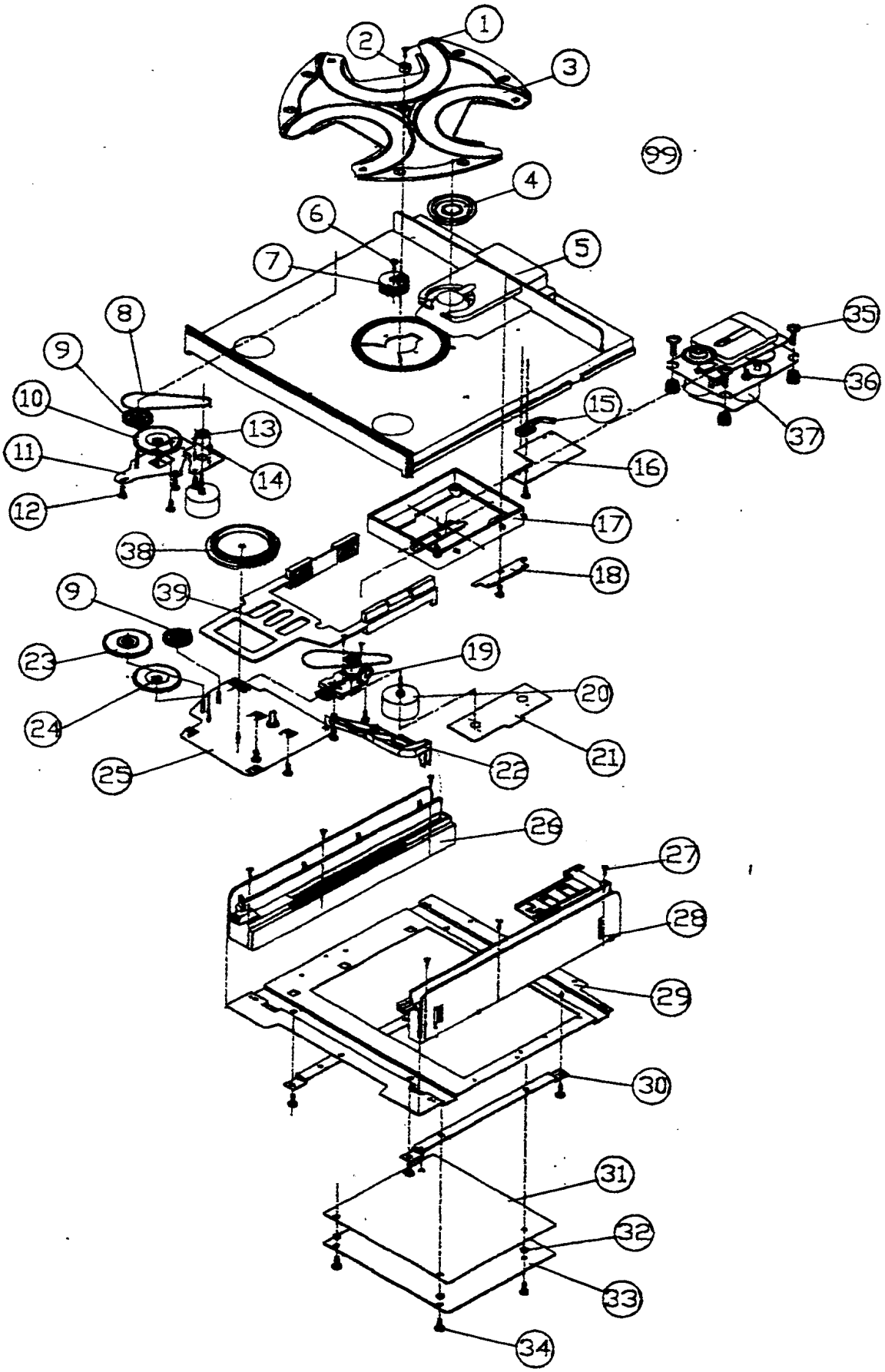
REMOTE CONTROL PCB ASS'Y



U995FD3R EXPLODED VIEW PARTS LIST

RF NO	PART NUMBER	DESCRIPTION	RF NO	PART NUMBER	DESCRIPTION
1	202-2000005-00	CASS LENS "L"	29	21-029	BUTTON FRAME
2	202-2000006-00	CASS LENS "R"	30	701-0200023-00	CASS DECK LW-21SW
3	201-2000003-00	CASS DOOR PANEL "L"	31	471-0000030-00	NUT M3
4	201-2000004-00	CASS DOOR PANEL "R"	32	470-2000802-09	SCREW ϕ2X8PT
5	201-0770001-00	CASS DOOR FRAME	33	402-0480000-00	PCB BRACKET "L"
6	441-0050000-00	CASS EJECT SPRING	34	403-0480000-00	PCB BRACKET "R"
7	203-2000026-00	VOLUME KNOB	35	190-6680000-05	MAIN PCB ASS'Y
8	202-2000003-00	TUNING LENS	36	415-0110000-00	BOARD BRACKET
9	208-2010005-00	CD DOOR	37	101-057065A-03	TRANSFORMER
10	202-2010002-00	CD LENS	38	419-0000462-00	TRFMR BRACKET
11	203-2010003-00	CD 3KEY DISC KNOB	39	506-2050000-00	BOTTOM BOARD
12	203-2010035-00	CD OPERN/CLOSE KNOB	40	480-0200200-70	RUBBER FOOT 20X20X7
13	203-2000030-00	BALANCE KNOB	41	470-3000502-09	SCREW ϕ3X8PT
14	203-2000022-00	HI SPEED KNOB	42	470-3001008-00	SCREW ϕ3X10PWM
15	416-0050000-00	FLASH MNT BRACKET	43	505-2050000-00	BACK BOARD
16	200-2050001-00	MAIN FRONT PANEL	44	702-6400014-07	PR3-3CD BASE
17	146-3506202-00	PHONE JACK	45	501-2000000-00	3SIDE BOARD
18	413-000000-00	PHONE BRACKET	46	209-0690007-00	SIDE BOARD WASHER
19	190 6680006-00	CD DISC CTRL PCB	47	470-3001008-00	SCREW ϕ3X10PWM
20	203-2000021-00	POWER/MUTE/EQ KNOB	48	470-3501214-09	SCREW ϕ3.5X12TA
21	203-2010011-00	CD 11 KEYS	49	470-3001002-09	SCREW ϕ3X10PT
22	146-0002001-00	JACK FM ANT	50	4740-1750504-00	SCREW ϕ1.75X5PWA
23	417-0490000-00	AC CORD BRACKET	51	470-3001004-09	SCREW ϕ3X10PWA
24	148-RCA2190-00	RCA JACK (AUX)	52	470-3000808-09	SCREW ϕ3X8PWM
25	206-0050004-00	DUMPER GEAR	53	470-3001204-09	SCREW ϕ3X12PWA
26	206-0050005-00	DUMPER GEAR HOLDER	54	470-3001204-09	SCREW ϕ3X12PWA
27	190-5820000-05	LCD & CONTROL PCB	55	470-3001208-09	SCREW ϕ4X12PWM
28	203-2000036-00	CASS BUTTON 11 KEYS			

EXPLODED VIEW (CD BASE)



PR3 CD BASE EXPLODED VIEW PARTS LIST

RF NO	PART NUMBER	DESCRIPTION	RF NO	PART NUMBER	DESCRIPTION
1	470-3000802-00	SCREW ϕ3X8PT	21	190-MOTOR00-00	PCB MOTOR OPEN/CLOSE
2	208-0750053-00	CD TURN TABLE AXIS	22	208-0750052-00	SWAYING BAR (PR3)
3	208-0750031-00	DISC TURN PLATE	23	208-0750058-00	GEAR 3 3CD02005
4	445-0000003-00	CD CHOCKIBG MAGNET	24	208-0750059-00	GEAR 4 3CD02007
5	208-0750002-04	CD SLIDE BASE	25	448-0750003-00	GEAR HOLDER METAL PLATE 3
6	470-3000408-09	SCREW ϕ3X4PWM	26	208-0750002-01	RAIL LEFT
7	208-0750058-00	GEAR 1 3CD02003	27	470-3001209-00	SCREW ϕ3X12KM
8	208-0750041-01	MOTOR BELT	28	208-0750002-02	RAIL RIGHT
9	208-0750039-00	MOTOR PULLY	29	448-0750001-01	METAL PLATE 1 PR3CD
10	208-0750057-00	GEAR 2 3CD02004	30	401-0750000-00	PCB BRACKET 205X12X1T PR3
11	448-0750003-00	METAL PLATE3 PR3CD	31	450-3261240-00	SILVER PAPER 326X124mm
12	470-3001002-09	SCREW ϕ3X10PB	32	430-0800320-10	FIBRE WASHER ϕ8Xϕ3.2X1.0T
13	208-0750039-00	MOTOR PULLY	33	190-1050000-00	CD PCB(OR OTHERS NUMBER)
14	470-2600328-09	SCREW ϕ2.6X3TM	34	470-3000608-09	SCREW ϕ3X6PWM
15	143-000MLSI-00	TAC T SW MLS-1 (PR3)	35	470-2601032-09	SCREW ϕ2.6X10PWTB
16	190-5530000-00	PCB 553 SLIDE MICRO SWITCH	36	461-0000025-05	CD RUBBER CUSHION 25' GREEN
17	208-0750032-00	CD DECK BRACKET	37	702-2100004-00	CD DECK SONY KSM-213CDM
18	208-0750032-01 208-0750032-02	CD DECK HOLDER (L) CD DECK HOLDER (R)	38	208-0750060-00	GEAER 5 3CD02006
19	205-0750019-00	MOTOR BRACKET (PR3)	39	208-0750051-00	DECK UP DN SLIDE PR3
20	178-0012560-00	MOTOR RF500TB12560			

ELECTRICAL SPECIFICATION

(D995FD3TR 2B 4.5W)

TEST CONDITION

*POWER SOURCE	230V/50HZ
*LOAD RESISTOR	8 OHM
*REFERENCE OUTPUT	500MW
*FM MODULATION FREQUENCY	1KHz
DEVIATION	22.5KHz
*AM MODULATION FREQUENCY	400Hz
MODULATION	30%

AM

ITEM	DESCRIPTION		UNIT	NOMINAL	LIMIT
1	TUNING RANGE		KHz		531~1602
2	SENS FOR 20dB S/N	612KHz	dB	58	64
		999KHz		58	64
		1404KHz		58	64
3	S/N RATIO	999KHz	dB	40	30
4	IF REJECTION	612KHz	dB	45	40
5	IMAGE REJECTION	1404KHz	dB	40	35
6	T.H.D. AT 5MV	999KHz	%	2	4
7	WHISTLE 2IF MODULATION AT 5MV	2IF	%	5	15
8	FREQUENCY RESPONSE (–6Db)		Hz	80~3K	120~2K
9	AUTO SCAN SENSITIVITY	999KHz	dB	58	64
10	OUTPUT POWER AT (60% MOD)		W		4.5
11	IF		KHz	450	+/-5

FM

IETM	DESCRIPTION		UNIT	NOMINAL	LIMIT
1	TUNING RANGE		MHZ		87.5 – 108
2	SENS FOR 30 dB S/N AT	90MHz	dB	18	26
		98MHz		18	26
		106MHz		18	26
3	S/N RATIO AT 1MV	98MHz	dB	46	40
4	IF REJECTION	90MHz	dB	46	40
5	IMAGE REJECTION	106MHz	dB	26	20
6	T.H.D.	98MHz	%	0.5	1.5
7	SEPARATION	98MHz	dB	28	25
8	STEREO INDICATOR SENS	98MHz	dB	18	26
9	POWER OUTPUT (DEV 45KHz)	98MHz	W		4.5
10	IF		MHz	10.7	±0.3
11	AUTO SCAN SENSITIVITY		dB	28	33

CD

ITEM	DESCRIPTION		UNIT	NOMINAL	LIMIT
1	OUTPUT POWER		W	4.5	4.0
2	T H D	1KHz	%	0.5	1.5
3	FREQUENCY RESPONSE (-3dB)		Hz	40~20K	60~16K
4	CHANNEL SEPARATION	1KHz	dB	45	35
5	S/N AT R.O.	1KHz	dB	60	50
6	HUM & NOISE	MAX VOL	mV	10	1.5
		MIN VOL		1	3

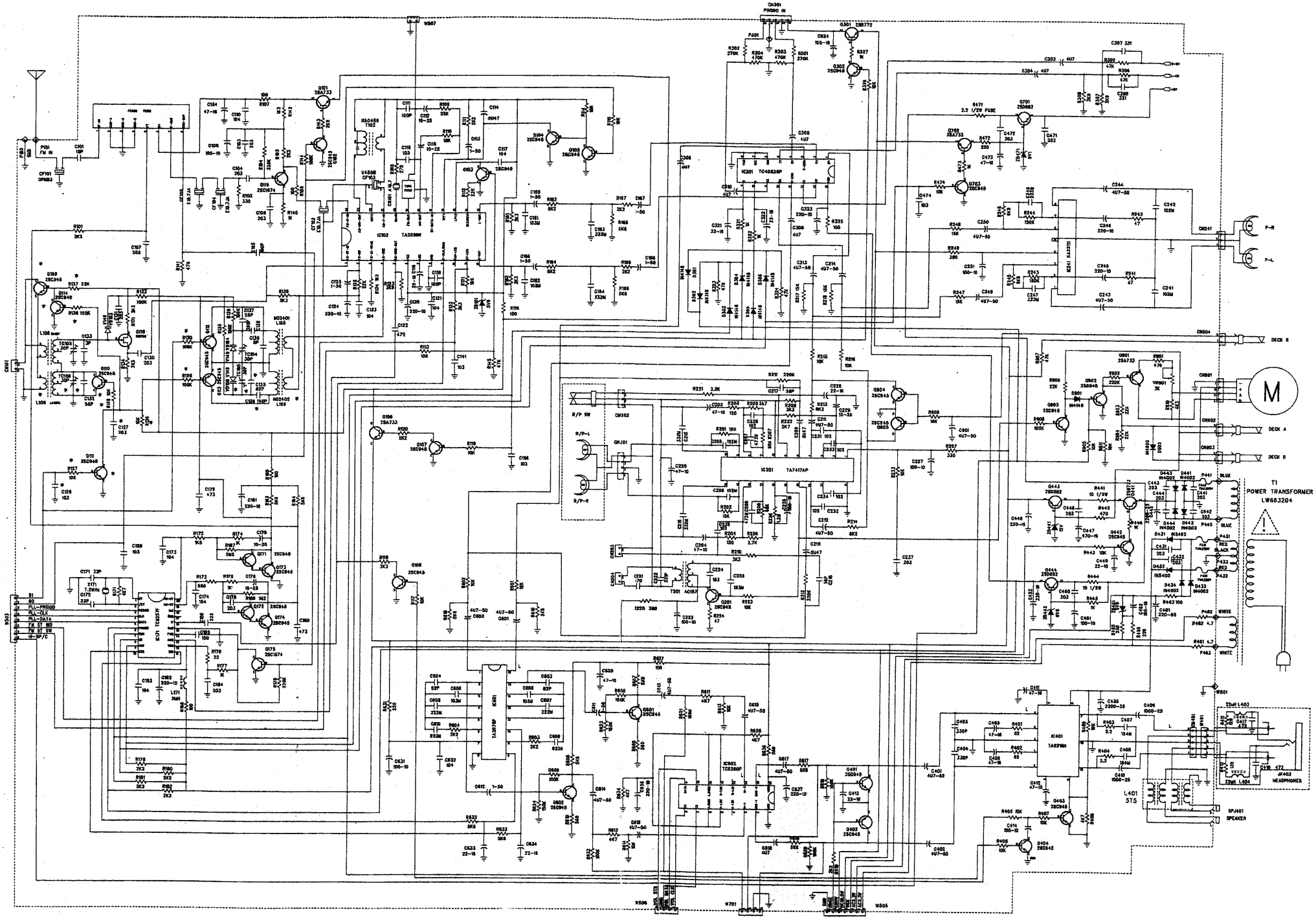
TAPE

ITEM	DESCRIPTION			UNIT	NOMINAL	LIMIT
1	TAPE SPEED		B-111N (3000Hz)	%	±1	+3-2
2	W.O.W.& FLUTTER (JIS WTD)		B-111N	%	0.2	0.35
3	S/N RATIO	P/B	B-212N	dB	45	40
		R/P	B-5511	dB	40	35
4	FREQUENCY RESPONSE	P/B	125Hz	dB	+/-2	+/-6
			6K3Hz		+/-2	+/-6
5	FREQUENCY RESPONSE	P/B	125Hz	dB	+/-2	+/-6
		B257	6K3Hz		+/-2	+/-6
6	SEPERATION	P/B	B-141N	dB	40	30
7	T.H.D.	P/B	B-118N	%	1.5	3
		R/P	B-5511	%	2.	10
7	POWER OUTPUT	10%	. B-212n	W	4.5	4.0

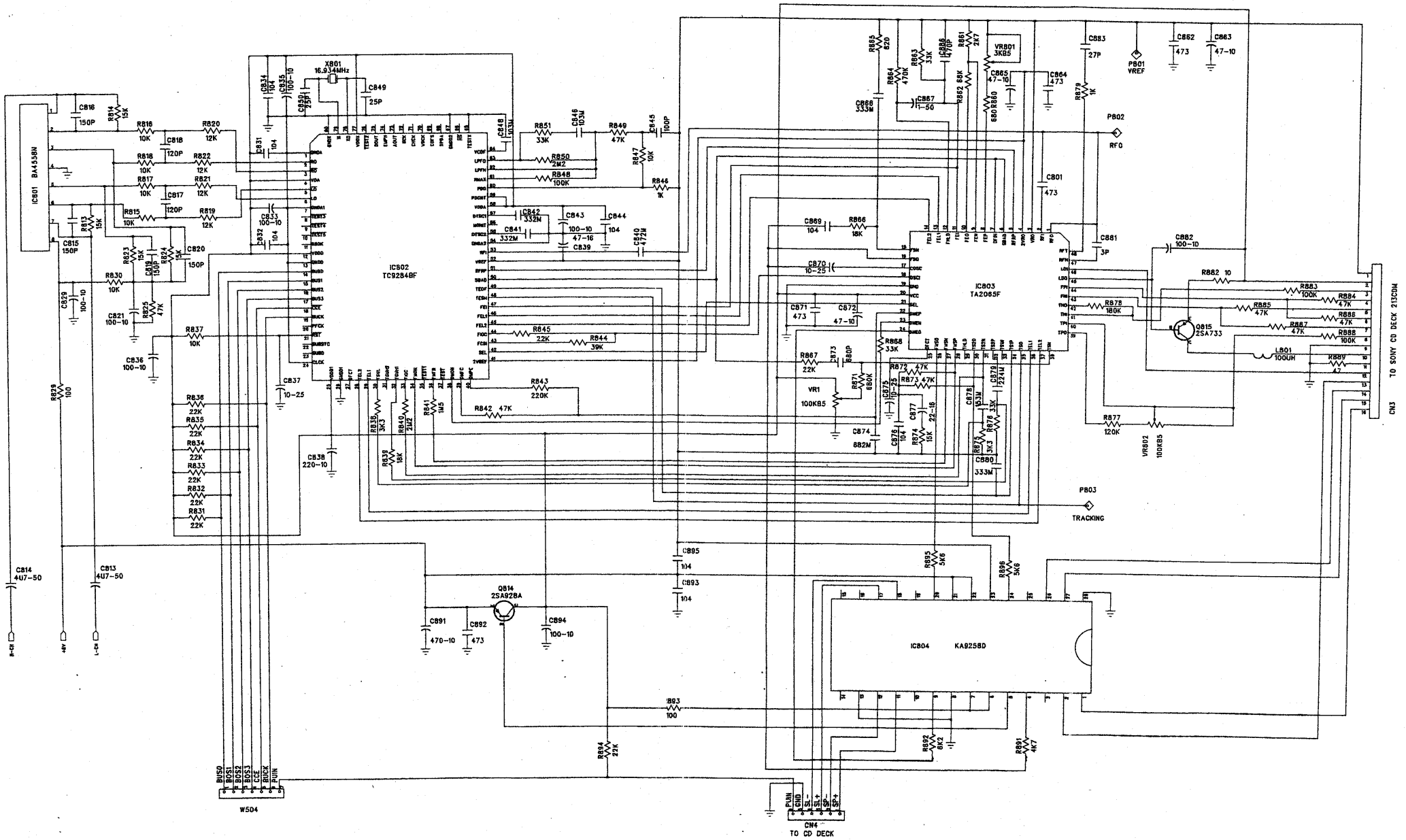
AUX

ITEM	DESCRIPTION		UNIT	NOMINAL	LIMIT
1	SPEED	SR4005	W	4.5	4.0
2	WOW / FLOTTER (JIS STD)	SR4005	%	0.2	0.35
3	L / R CHANNEL	SR4005	dB	1	3
4	SEPARATION	SR4005	dB	15	11
5	OUTPUT POWER	SR4005	W	4.5	4
6	AUX OUTPUT POWER (300~500MV)		W	4.5	4

SCHEMATIC DIAGRAM (MAIN UNIT)



CD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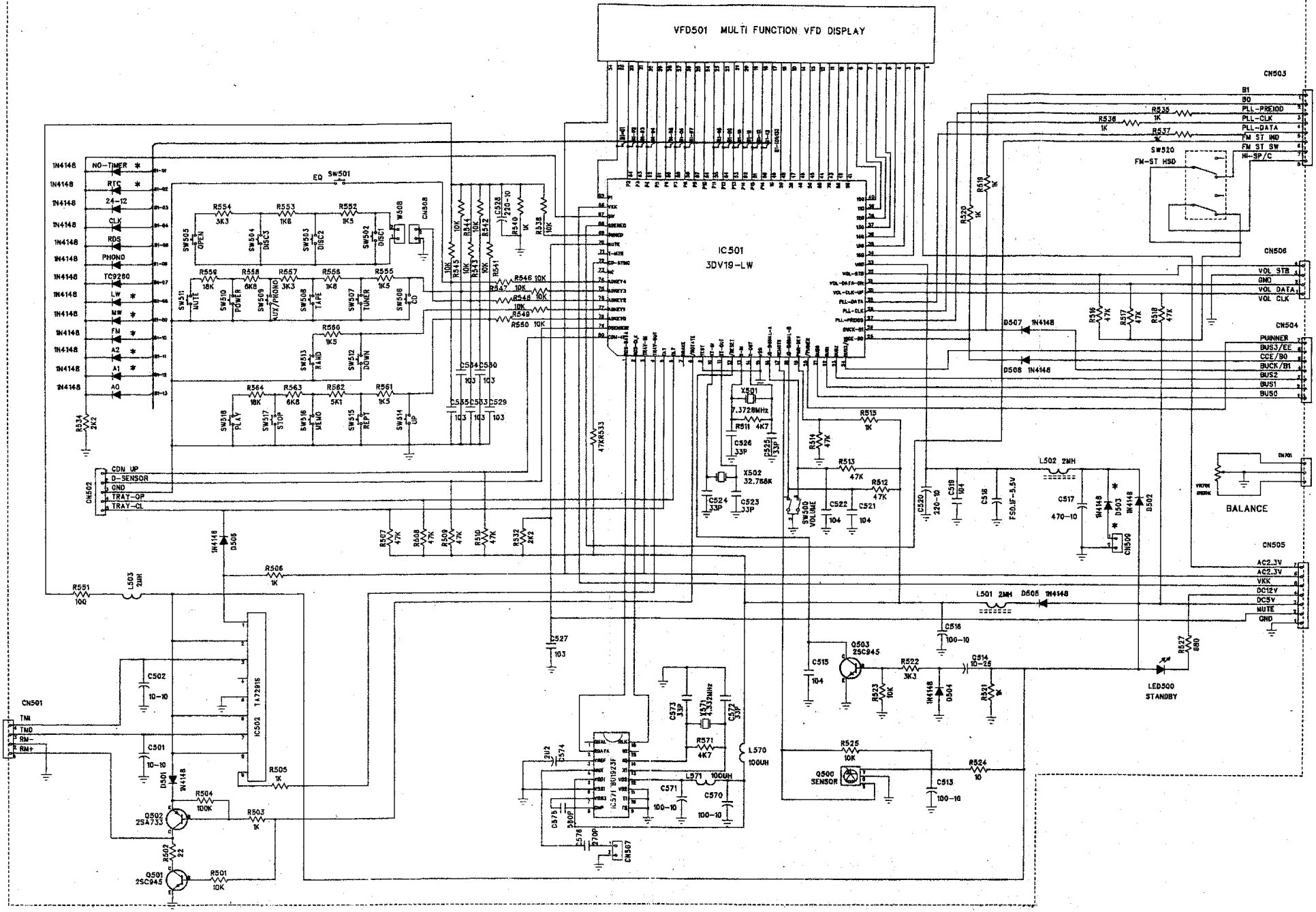
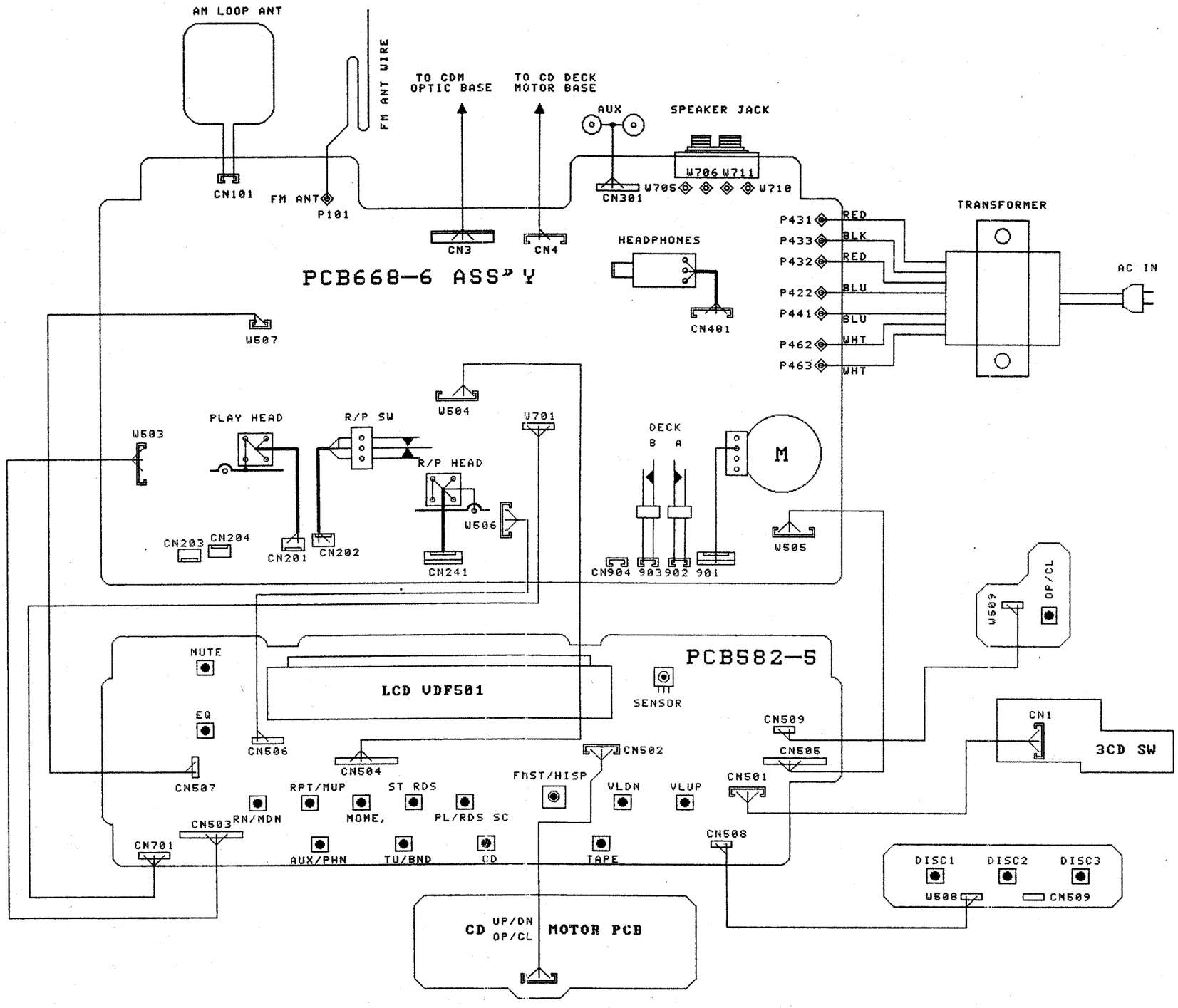
IC804 KA9258D
XB01 16.9934MHz
VR801 3KB5
VR1 100KB5
VR802 100KB5
Q814 2SA928A
Q815 2SA733
P801 VREF
P802 RFO
P803 TRACKING
CN3 TO SONY CD DECK 213CDM
CN4 TO CD DECK
W504
BUSO
BOS1
BOS2
BOS3
CCE
BUCK
PUIN
GND
SL-
SL+
SP-
SP+

(CONTROL & LCD DISPLAY)



995FD3R WIRING DIAGRAM



EXPLODED VIEW (CABINET)